

## CLAIMS

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A hand-operated, portable sprayer comprising:

5 a tank;

a flow controller;

a pump assembly for pressurizing said tank;

an air delivery system connected to said tank and said flow controller, whereby pressurized air flows from the headspace in said tank to said flow controller; and

10 a liquid delivery system connected to said tank and said flow controller, whereby liquid flows from said tank to said flow controller, wherein said liquid delivery system is segregated from said air delivery system such that the liquid is withdrawn from said tank segregated from the air.

2. The hand-operated, portable sprayer of claim 1, wherein said pump assembly includes

15 a hand pump for pressurizing the air in the headspace of said tank.

3. The hand-operated, portable sprayer of claim 1, wherein an air control valve is located between said tank and said flow controller along said air delivery system.

4. The hand-operated, portable sprayer of claim 3, wherein said air control valve comprises a needle valve.

20 5. The hand-operated, portable sprayer of claim 3, wherein said air control valve comprises a pinch valve.

6. The hand-operated, portable sprayer of claim 1, wherein a liquid control valve is located between said tank and said flow controller along said liquid delivery system.

7. The hand-operated, portable sprayer of claim 6, wherein said liquid control valve comprises a needle valve.

8. The hand-operated, portable sprayer of claim 6, wherein said liquid control valve comprises a pinch valve.

5 9. The hand-operated, portable sprayer of claim 1, wherein the exterior surface of said tank contains an inlet orifice for an external feed line.

10. The hand-operated, portable sprayer of claim 1, wherein the exterior surface of said tank contains a pressure release valve.

11. The hand-operated, portable sprayer of claim 1, wherein said air delivery system  
10 comprises an exit orifice located on the headspace portion of said tank, which is connected to an air transport system.

12. The hand-operated, portable sprayer of claim 1, wherein said liquid delivery system comprises a withdrawal tube inserted into said tank through an exit orifice, in which one end of said withdrawal tube is connected to a liquid transport system and the other penetrates the  
15 interior of said tank to near the bottom of said tank.

13. The hand-operated, portable sprayer of claim 1, wherein said liquid delivery system comprises an exit orifice located near the bottom of said tank, which is connected to a liquid transport system.

14. The hand-operated, portable sprayer of claim 1, wherein said liquid delivery system  
20 comprises an exit orifice located on said tank and a flexible hose penetrating through said orifice into said tank, whereby liquid is transported to said flow controller.

15. The hand-operated, portable sprayer of claim 11, wherein said air transport system comprises a flexible hose, whereby air is transported to said flow controller.

16. The hand-operated, portable sprayer of claim 12, wherein said liquid transport system comprises a flexible hose, whereby liquid is transported to said flow controller.
17. The hand-operated, portable sprayer of claim 1, wherein said air and liquid delivery systems are arranged substantially side-by-side.
- 5 18. The hand-operated, portable sprayer of claim 1, wherein said air and liquid delivery systems are arranged substantially coaxially.
19. The hand-operated, portable sprayer of claim 1, wherein said sprayer contains a mixing medium inserted into the fluid flow path.
20. The hand-operated, portable sprayer of claim 19, wherein said mixing medium  
10 comprises a fibrous mesh.
21. A hand-operated, portable sprayer comprising:
- a sealed, pressure-resistant tank having a pump assembly inserted into said tank, said pump assembly supplying air to said tank to pressurize a headspace defined within said tank;
- a liquid withdrawal tube extending into and near a bottom of said tank;
- 15 a liquid transport hose connected in fluid communication with said liquid withdrawal tube;
- an air transport hose connected in fluid communication with said headspace;
- a flow controller attached in communication with said air transport hose and said liquid transport hose, said flow controller having a valve for selectively controlling flow of effluent  
20 from the sprayer.
22. The sprayer of claim 21 wherein said flow controller defines a mixing chamber in communication with said air transport hose and said liquid transport hose, wherein liquid delivered by said liquid transport hose is merged with air delivered by said air transport hose.

23. The sprayer of claim 21 further comprising a fitting connected between said flow controller to said air transport hose and said liquid transport hose, said fitting defining a mixing chamber, wherein liquid delivered by said liquid transport hose is merged with air delivered by said air transport hose.

5 24. The sprayer of claim 22 further comprising a mixing medium disposed within or downstream from said mixing chamber.

25. The sprayer of claim 23 further comprising a mixing medium disposed within or downstream from said mixing chamber.

26. A portable sprayer comprising:

10 a tank;

a mixing chamber separate from said tank;

an air delivery system in fluid communication with said tank and said mixing chamber;

a liquid delivery system in fluid communication with said tank and said mixing chamber, said liquid delivery system being segregated from said air delivery system such that

15 air and liquid are separately delivered from said tank to said mixing chamber, wherein said mixing chamber combines air from said air delivery system and liquid from said liquid delivery system to generate a foam; and

a flow controller in fluid communication with said mixing chamber for controlling a flow of foam from the sprayer.

20 27. The sprayer of claim 26 further comprising a mixing media located within or downstream from said mixing chamber.

28. The sprayer of claim 27 further comprising a nozzle mounted to an outlet of said flow controller, said mixing media being disposed immediately upstream from said nozzle.